

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1-11. (Canceled)

12. (New) A voltage conversion device variably changing an input voltage to be applied to an inverter driving a motor, comprising:

a voltage converter executing voltage conversion between a power supply and said inverter; and

a control device controlling a switching duty of an upper arm and a lower arm included in said voltage converter so that said switching duty is a duty from which influence of a dead time of said voltage converter is removed, when a voltage command value of said voltage conversion is at least a power supply voltage and at most a predetermined voltage.

13. (New) The voltage conversion device according to claim 12, wherein said control device controls said voltage converter by fixing said switching duty when said voltage command value is at least said power supply voltage and at most said predetermined voltage.

14. (New) The voltage conversion device according to claim 12, wherein said predetermined voltage is determined based on the dead time of said voltage converter.

15. (New) The voltage conversion device according to claim 12, wherein

in a case where said control device controls said voltage converter to decrease an output voltage of said voltage converter, said control device fixes said switching duty when said voltage command value reaches a value of at least said power supply voltage and at most said predetermined voltage.

16. (New) The voltage conversion device according to claim 12, wherein said voltage converter variably changes said input voltage in a linear manner.

17. (New) A voltage conversion device variably changing an input voltage to be applied to an inverter driving a motor, comprising:

a voltage converter including an upper arm turned on for a first on-duty and a lower arm turned on for a second on-duty determined by subtracting said first on-duty from 1, and executing voltage conversion between a power supply and said inverter by switching said upper arm and said lower arm; and

a control device controlling, in a case where said first on-duty calculated based on a voltage command value of the voltage conversion by said voltage converter is influenced by a dead time of said upper arm and said lower arm, said first on-duty so that said first on-duty is an appropriate on-duty with influence of said dead time removed therefrom.

18. (New) The voltage conversion device according to claim 17, wherein said control device controls, in the case where said first on-duty calculated based on said voltage command value is influenced by said dead time, switching of said upper arm and said lower arm by fixing said first on-duty at said appropriate on-duty.

19. (New) The voltage conversion device according to claim 17, wherein

said control device controls, in a case where said first on-duty calculated based on said voltage command value is larger than a maximum effective on-duty and smaller than a longest on-duty allowing said upper arm to be turned on continuously during a control period, switching of said upper arm and said lower arm by fixing said first on-duty at said appropriate on-duty, and

said maximum effective on-duty is determined by dividing by said control period an effective control period calculated by subtracting said dead time from said control period.

20. (New) The voltage conversion device according to claim 19, wherein said appropriate on-duty is said maximum effective on-duty or said longest on-duty.

21. (New) The voltage conversion device according to claim 17, wherein said voltage converter variably changes said input voltage in a linear manner.

22. (New) A computer-readable recording medium having a program recorded thereon for a computer to control voltage conversion by a voltage conversion device,

said voltage conversion device including a voltage converter having an upper arm turned on for a first on-duty and a lower arm turned on for a second on-duty determined by subtracting said first on-duty from 1, and executing voltage conversion between a power supply and an inverter by switching said upper arm and said lower arm, and

said program allowing said computer to execute:

a first step of calculating said first on-duty based on a voltage command value of said voltage conversion;

a second step of determining whether or not said calculated first on-duty is influenced by a dead time of said upper arm and said lower arm; and

a third step of controlling, when it is determined that said first on-duty is influenced by said dead time, said first on-duty so that said first on-duty is an appropriate on-duty.

23. (New) The computer-readable recording medium according to claim 22, wherein in said third step, switching of said upper arm and said lower arm is controlled by fixing said first on-duty at said appropriate on-duty.

24. (New) The computer-readable recording medium according to claim 22, wherein said second step includes:
a first sub-step of calculating a maximum effective on-duty by using said dead time;
a second sub-step of determining whether or not said calculated first on-duty is larger than said maximum effective on-duty and smaller than a longest on-duty allowing said upper arm to be turned on continuously during a control period;

a third sub-step of determining that, when said first on-duty is larger than said maximum effective on-duty and smaller than said longest on-duty, said first on-duty is influenced by said dead time; and

a fourth sub-step of determining that, when said first on-duty is at most said maximum effective on-duty or equal to said longest on-duty, said first on-duty is not influenced by said dead time, and

said maximum effective on-duty is determined by dividing by said control period an effective control period calculated by subtracting said dead time from said control period.

25. (New) The computer-readable recording medium according to claim 24, wherein in said third step, switching of said upper arm and said lower arm is controlled by fixing said first on-duty at said maximum effective on-duty or said longest on-duty.

26. (New) The voltage conversion device according to claim 13, wherein said predetermined voltage is determined based on the dead time of said voltage converter.

27. (New) The voltage conversion device according to claim 13, wherein in a case where said control device controls said voltage converter to decrease an output voltage of said voltage converter, said control device fixes said switching duty when said voltage command value reaches a value of at least said power supply voltage and at most said predetermined voltage.

28. (New) The voltage conversion device according to claim 13, wherein said voltage converter variably changes said input voltage in a linear manner.

29. (New) The voltage conversion device according to claim 18, wherein said control device controls, in a case where said first on-duty calculated based on said voltage command value is larger than a maximum effective on-duty and smaller than a longest on-duty allowing said upper arm to be turned on continuously during a control period, switching of said upper arm and said lower arm by fixing said first on-duty at said appropriate on-duty, and

said maximum effective on-duty is determined by dividing by said control period an effective control period calculated by subtracting said dead time from said control period.

30. (New) The voltage conversion device according to claim 18, wherein said voltage converter variably changes said input voltage in a linear manner.

31. (New) The computer-readable recording medium according to claim 23, wherein said second step includes:

a first sub-step of calculating a maximum effective on-duty by using said dead time;

a second sub-step of determining whether or not said calculated first on-duty is larger than said maximum effective on-duty and smaller than a longest on-duty allowing said upper arm to be turned on continuously during a control period;

a third sub-step of determining that, when said first on-duty is larger than said maximum effective on-duty and smaller than said longest on-duty, said first on-duty is influenced by said dead time; and

a fourth sub-step of determining that, when said first on-duty is at most said maximum effective on-duty or equal to said longest on-duty, said first on-duty is not influenced by said dead time, and

said maximum effective on-duty is determined by dividing by said control period an effective control period calculated by subtracting said dead time from said control period.